



The Arboretum Bulletin

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SUMMER AND FALL ACTIVITIES AT THE ARBORETUM

MR. HERBERT IHRIG, our enthusiastic rhododendron culturist, is a great exponent of proper soil conditions, both chemical and physical, for any and all types of plants, with definite accent on "rhododendron". In brushing shoulders, on a summer's occasion, we elicited a most interesting comment from him. Doubting not its originality, we pass it on for what it is worth—and it is worth a lot! "Far, oh far, better is it to put a fifty-cent plant in a five-dollar hole, than to crush and browbeat a five-dollar plant into a fifty-cent hole!" How true!

All frivolity aside, one of the prime errors encountered in the cultivation of ornamental plants is this matter of placing trees and shrubs, choice or cheap, in inadequately prepared areas. Most of us would be far ahead if we gave sufficient attention to this detail. There is ample precedent to substantiate everything that these statements proclaim and intimate.

Fortunately, some of us were thrown in contact with old world gardeners early in life and from them were learned the simple, painstaking methods that have placed these true plantmen in the position they have occupied for years. Too often in our own hurried thrusts to accomplish more and more in less and less time, we have failed to heed the simplest facts upon which are hinged the successes or failures of our endeavors.

Old world practices, derived through years and centuries of trial and error, point distinctly to the need for working up the soil deeply and well before planting even the smallest of trees and shrubs. It is not at all uncommon to find that soils in England, for example, have been worked to a depth of three feet; and if necessary the soil may be entirely re-made by adding sand, or manure, or sod, or clay, depending upon the eccentricities of the particular plant involved. How seldom do we encounter such things in our own country.

At the moment we at the arboretum are engaged in the aggravatingly slow process of excavating areas six feet wide and three feet deep to accommodate the flowering cherries and

dogwoods in the Azalea Way planting. Through the kindness of the Seattle Garden Club a considerable sum of money was recently received for the purchase of the plants. Orders have already been placed for three hundred cherries and two hundred dogwoods. They will all be here and ready to plant by mid-November. In order to be prepared to put them immediately into their permanent places, the six feet by three feet holes are being dug. What a job it is and what grumbling goes on among our men who view the whole procedure as foolishness. Why such back-breaking work in this heavy clay? Why such big holes for three- to five-foot stock? Why, indeed? Answer the following obvious questions and one understands why. For how long a time must these trees grow here? As they develop above ground do the roots stand still or do they extend and branch and ramify outward and downward? What happens to the delicate rootlet when it encounters the brick-like clay? Does it continue to extend and branch in a normal way at a normal rate? Can branches and leaves and flowers develop luxuriantly if root growth is restricted? Whence comes the much-needed nitrogen? Out of inorganic clay?

Actually, the preparation of an adequate hole is but the beginning of the story. The clay is being excavated to a depth of three feet, to be sure, but the soil which goes back in must be altered and made over to suit the cherries and dogwoods. Sand, peat from the bog, compost, and clay will be mixed in various proportions—more sand for the cherries—much less for dogwoods—so that each will find the conditions which it most enjoys.

As soon as the cherries and dogwoods are in place the planting of azaleas will begin. Through funds provided by the Seattle Garden Club, purchases of these plants have already been made. We estimate that approximately fifteen hundred mature azalea plants will be in place by next spring. Careful soil preparation will precede the planting.

The Woodland Garden area has been completed so far as the construction work is concerned. The West Seattle Garden Club, sponsors of this project, have provided funds so that the plantings can be started during the fall. This delightful area

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will be developed as a beautiful, naturalistic valley and will feature certain herbaceous plant groups which thrive under woodland conditions. *Mertensia*, *Hepatica*, *Cypripedium*, *Lilium* and *Scilla* are among the most prominent genera; some of these have already been ordered.

It is always gratifying to receive substantial contributions from outside the city of Seattle. Last week we had a communication from the Skagit Garden Club at Mount Vernon, Washington, offering the sponsorship of a collection of thirty-five of the newest types of clematis hybrids and species. The plants are being ordered for the fall planting season and will be held in the nursery until sufficiently developed to be placed in their permanent position. Such a contribution as this is a definitely favorable reflection on the foresight and broadmindedness of the sponsoring group. The women of the Skagit Club deserve our warmest thanks.

During the past spring the Arboretum lost one of its sincerest friends with the passing of Mr. E. Fabi, landscape architect. The extraordinary personality of the man had endeared him to his hosts of friends. In recognition of all his fine, gentlemanly traits, and as a token of appreciation for the genius which he had displayed in his chosen field, these many friends have created a fund for the purpose of establishing a planting at the arboretum as a memorial to him. The planting will consist wholly of the many lovely varieties and species of magnolia and will occupy the prominent hillside at the south end and immediately east of the nursery. Here magnolias should exhibit themselves beautifully against the native firs and cedars in the background. A most fitting memorial to a grand person.

The work of propagating plants by cuttings continued apace during September. We estimate that well over thirty thousand cuttings are now in the benches; many of them, such as the heathers, are already rooted and will be put out into cold frames as soon as possible. The most recent contribution of propagating material came through Dr. G. B. Rigg, of the department of Botany, who helped procure for us enough *Kalmia polifolia* (bog laurel) to make 2200 tip cuttings. This group will form the nucleus of our bog meadow planting in the lagoon area.

The island in the lagoon section was planted in early September. On it have been concentrated the sixteen species of bamboo that have proven hardy here. We felt that it would be wise to confine the bamboos to this area since so many of them have a tendency to run rampant if not restrained in some such fashion. Along with the bamboos 3500 Japanese iris (*I. laxigata*) were also planted and the fruticetum area, which is adjacent, is being dressed up so that the whole tract will be most presentable, especially during July and August when the iris bloom.

THE USE OF CHEMICALS IN THE PROPAGATION OF PLANTS BY CUTTINGS

J. H. HANLEY

(Continued from last month)

THE selection of the proper type of cutting is always a matter of great importance. For the majority of woody plants, especially the broad-leaved evergreens, softwood cuttings taken in July, August or September (the date will vary with latitude, longitude, altitude, and with the exigencies of the local climate during the given year) will be found most satisfactory provided they (the cuttings) are made from the current season's wood. Hardwood cuttings may be used for propagating a wide variety of deciduous shrubs and trees if they are taken from the current season's growth after the leaves have fallen. In most instances hardwood cuttings will be long (8-10 inches) and will either be planted into the field immediately after they are made or will be bundled and stored over the winter in an outdoor pit or deep bin of sand or very light soil.

As to the type of cutting to be used and the method of making it up, opinions are quite variable. A decision on such details will rely principally upon the past experience of the propagator if he is a commercial man or upon the recommendation of recognized authorities if he is an amateur. Some commercial men use short cuttings (3-4 inches) entirely; others use a longer type (5-7 inches) both can be successfully handled. Certain individuals recommend that most of the leaves be removed from the cuttings, others that only a very small proportion of them be taken off; either method can be employed effectively. At the arboretum, where cutting bench space is at a premium, the short cutting with the maximum of foliage cut away, is used and all the other details of the environment, such as air temperature and humidity, are adjusted accordingly. At other places, such as the Garfield Park Conservatory in Chicago, a much longer cutting with greater leaf area (spaced much farther apart in the bench) is used. For the average amateur, it is our feeling that the shorter types are to be preferred.

A point that is often overlooked and yet one which can be of considerable importance even in woody plants, is the selection of the correct position of the basal cut. With some plants, such as *Coleus*, roots will form anywhere along the stem; hence the position of the bottom cut is of no importance. But with the majority of plants it has been demonstrated that roots develop much more rapidly at a node. The node is that place on the stem where the leaf and its axillary bud arise; the "joint" of the stem, as it is often called. There has been a certain amount of speculation as to just why root formation occurs more abundantly and quicker at a node than at positions between the "joints" of the stem. Two explanations of the fact seem most

logical. The first proposes that, since there is a larger quantity of food stored and ready for use at the node, it follows logically that roots would develop better from this position. The second explanation arises from experiments which have proven that greater quantities of the plant hormones are present in and near the axillary bud than elsewhere along the stem and that these hormones bring about the accelerated growth of roots when the bottom cut of the "slip" is made at the node rather than at some position farther removed from the bud. That either of these facts, alone, can be used to explain the result is open to question, since *both* food and hormones are important limiting factors for growth. It is entirely possible, and seemingly more logical, to suppose that neither one of these factors, acting independently, can bring about the more rapid formation of roots. Rather it is more plausible to expect that the better results follow the interaction of *both* the factors; that *both* food materials and hormones must be present in adequate quantities in order to bring about accelerated root formation.

In order to be absolutely safe, then, one should always make the bottom cut at, or just below the node or "joint" on the stem. This is especially important if one is propagating plants like *Cornus Nuttallii*, the western dogwood, where the nodes are spaced far apart on the stem.

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After the cuttings have been made and inserted in the sand there is no single detail of greater importance than the watering. It should always be kept in mind that, until roots are formed, the cutting is relying upon a wholly inadequate water-absorbing system. Every living cell in the leaves, buds and stem is in constant need of water: water can be procured only through the cut end at the base. In order to permit as much water

absorption as possible two things should be borne in mind; the base of the cutting must be in close contact with the rooting medium, and the moisture content of the medium should be maintained at a relatively high, constant level. It is unwise, however, to have too much water present; one cannot afford, for example, to permit water to "stand" about the base of the cutting; decay will almost invariably follow. Ordinarily it is best to water heavily immediately after the cuttings are placed in the bench. During the next 3-5 days most cuttings will shrink to some extent. This leaves a gap between the cutting and the rooting medium which, if allowed to remain, will cause severe drying of the stem tissues. In order to offset this it is wise to water heavily on the fourth or fifth day after insertion, thus washing the sand (or whatever medium is being used) back against the cutting. After this time, the amount of water needed will be governed by the light, temperature and humidity conditions surrounding the bench and by the requirements of the particular plant species being propagated. There is no hard and fast rule that will explain how often watering should be done. The safest procedure is to give all possible attention to the cuttings and bench; examine them several times each day and test the moisture with the end of the fingers to a good depth below the surface. Water whenever necessary but keep in mind that it is better to water heavily at longer intervals than to make many light, frequent applications, for the reason that the amount of moisture at the surface is *not* the same as the quantity around the base of the cutting. Light applications may keep the surface moist but may not provide enough water at the lower levels where it is needed by the developing roots. A little practice in attending the bench plus careful day-to-day observation of the condition of the cuttings will soon familiarize one with the proper water requirements of the particular plants being propagated.

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